

The following entries in this ledger are made in accordance with paragraph 3.2 of Service Test Procedures of the [REDACTED] Model H TA/15 Photographic Film Processor dtd 5 July 1963. Prepared by Target Materials Division I, Directorate of Intelligence HQ SAC.

Entry #1: Monday 30 Sep 1963:

Tuesday 1 Oct 1963: To

H TA/15 arrived at 1100 hours and was unloaded from the truck and on the dock at 1330 hours. All parts seemed to be in good order. Room #11 had been set up for the test and we immediately started moving the machine to where it had to be assembled. All of the pieces were mounted on skids which were of such length that it posed a problem of hand lifting the equipment off of them. We were able to finish setting two wet sections or modules of the processor in place.

Transcribed by:
S/MSgt Lewis N Heasten

Entry #2: Tuesday 1 Oct 1963:

We removed the remainder of the skids from the units and finished this phase at 1300. One minor accident took place when the take up station broke when we were moving it.

Entry #2: Tuesday 1 Oct 1963, Cont'd.
through the doorway. Actually we
were lucky that more accidents
didn't take place, since room 11
is located in the center of the
building and many doorways and
halls had to be passed through.
The machine is also very heavy
and we should have had some
type of forklift to move the modules
around.

With the machine available for
measurements, we marked the
floor for its installation and set
the pieces in place. A level and
plumb bob were required to install
the units. The following hook-
ups were made:

Large blower to air duct.

Air duct to wet wash section.

Electrical hook up from take-up
station to dry box.

Main cable from rear of
service units to back of
accumulator.

Protection bracket for pot on
take-up cart.

Set the service units in its
place.

We need the right hoses, and
proseal to continue with the hook STATOTHR
up. These are due from [REDACTED]
[REDACTED] tomorrow!

STATOTHR

Transcribed by:
Sgt Lewis N. Heastone

Entry #3: Wednesday 2 Oct 1963:

Continued with hook-up. Worked on hoses between service unit and machine. Some of the quick disconnects were too small for the size hose that went over them. To take up the difference in sizes tape had to be used. However we were unable to tighten the hose clamps enough to keep them from leaking. Using the lumber that came from the skids we built a platform between the service unit and the machine, and a platform for the front of the machine.

We installed 3,000 feet of thin leader on the film cart. This will be used to check to air knife and to make sure that the vacuum capstans are properly aligned.

The staple splicer had been disconnected for shipping and had to be installed and aligned.

Identification tags had been installed when the unit was packed but the process of moving had torn many of them loose. [REDACTED] and one of our maintenance people is working on tracing them down.

Transcribed by:
S1M51 Lewis N. Heaston

Entry #4: Thursday 3 October 1963

Front section of machine was realigned using plumb and levels. Wire gutters were installed and all wiring was connected along backsides of machine.

Finished connecting wiring between service units.

STATOTHR

[REDACTED] gave a discourse on the operation of the control panel for personnel selected to operate the machine.

Worked on the lines from the compressor to the splicer. Some parts had to be ordered from [REDACTED]

STATOTHR

Transcribed by
S/MSgt Lewis H. Houston

Entry #5: Friday 4 October 1963

Continued hooking up electrical system. No wiring was received from for the hook-up from the wall boxes to the machine, so regular heavy duty drop cords were used to check out the various systems. During the shipment to the squadron some of the tags identifying the various hook-up points had pulled loose, so [REDACTED] had to spend quite a while in tracing units down to make sure the connections were right.

Because of the impending SAC Quality Control Inspection we had to clean up the room before we could continue with the wiring.

Entry #5: Friday 4 October 1963 Cont'd

[REDACTED] used this time to prepare STATOTHR
a brief that describes and explains each
sub-component of the machine.

The relay controlling the 2 horsepower
blower on the dry box had to be
rewired. This unit was added to the
machine after the heater was torn
down at the factory and it will have to
be checked out.

Ran out of rubber hoses to hook the
HTA15 to the servidrum and had to
send to [REDACTED] for more.

STATOTHR

Transcribed by:
S/MSgt Lewis N. Heaston

Entry #6: Saturday 5 October 1963

Finished all of the electrical hook-up
from the main power boxes and
resumed checking out the electrical
systems in the service unit.

Transcribed by:
S/MSgt Lewis N. Heaston

Entry #7: Monday 7 October, 1963

All drain hoses were hooked-up
and much trouble was encountered as
there were no elbows to facilitate the
hook-up. All tanks were filled with
water and worked on checking out the
chemical solution bearings. The
hose supplying the hot water burst
and will have to be replaced with a
different type. The break got a lot of
wiring wet and it had to be dried
out before we could continue with our
testing. Most of the leaks in the
units were stopped by tightening the

Entry #7: Monday 7 October 1963 Cont'd
hose clamps.

Transcribed by S/M/Sgt Heastor

Entry #8: Tuesday 8 October 1963

STATOTHR

STATOTHR

[REDACTED] and [REDACTED] arrived to observe operation. Still some leaks in the service unit. Most seem under control after tightening the hose clamps, however the second wash tank manifold will have to come off and we don't have the right tools to do the job. The main air bearing blower had been hooked up wrong. The wire to the pilot light of the air bearing, which also controls the accumulator blowers had been directly connected to line one. Because of this a lot of the units came on (ran) when main power switch was activated. This caused [REDACTED] several hours of trouble shooting to trace down.

STATOTHR

The machine was fired up at 23:30 and ran for 15 minutes. All tracking seemed to be satisfactory and all units appeared to be in good shape.

Transcribed by:
S/M/Sgt Lewis N. Heastor

Entry #9: Wednesday 9 October 1963

The major part of this shift period was spent in checking leaks and valves in the service unit. The water lines to the service unit were checked and no leaks were noted. Safelights were installed above machine to facilitate work on the service unit.

Short Stop never used - →
- water only set.

There is indication that the →
Hasler Tachometer is inaccurate.

B

Entry # 9: Wednesday 9 October 1963

The bottom manifold of the second wash tank was removed so all the bearings, nuts and bolts could be tightened so there would be no leaks. This was accomplished and the manifold reinstalled.

The leaks were fixed on the bearings in the pre-wet tank. This was also accomplished in the first wash tank.

The recirculation hose of the redistributor developer redistribution tank was reinstalled because of leak.

All of the hose clamps in the developer and fix service unit were tightened to prevent any leaks. The manifold on wash tank number 2 is still leaking. A heavier hose and hose clamp is needed.

STATOTHR [REDACTED] was not available from 1730 to 2100 hours due to a conference with Col George.

The jumper wire was left off of take-up drive motor this was located and replaced.

All tanks were flushed with water and drained in preparation for filling with processing solutions.

Secondary developer (EK 4DS) F-5 hypo and short stop was placed in proper tanks.

The main drive pulfer was checked with a Hasker Tachometer against indicated drive speed. The machine indicator was off approximately 4 FPM. The temperature gauges on the developer were set at 68°F. The developer temperature was

77° F and hypo was 68°F

Started running leader through

Voltage drop. Amp went up. Kicked out pump
motor. WD

All valves have ^{ON-OFF} indicators. All valves have handles
WD

Entry #9: Wednesday 9 October 1963 Cont'd
 machine at 2120 hours. Spools ranged
 from 4 feet to 20 feet per minute. Torn
 leader and leader that was purposely
~~spliced & incorrectly~~ run through the machine.
 There was no trouble encountered from
 this torn and badly spliced leader.

The dryer take-ups spool was re-
 aligned during the run. This was
 accomplished in order to take up
 the leader in a straight line with
 the dry box.

Reset button on Wash Tank #2
 bottom bearing tripped. Possibly
 overloaded circuit.

It is suggested that pet cocks be
 placed on all solution pumps in
 order to bleed air from the system.
 It is now necessary to remove the
 pump facing in order to
 accomplish this. Tubing should
 also lead from the drain cocks to
 drain pans.

All pump valves are too complicated
 and special tools are required to
 open and close them. Valves should
 be of a type that can easily turned
 on or off by hand and have an
 indicator showing its status.

Transcribed by
 S/M/Sgt Lewis N. Hartson

Entry #10: Thursday 10 October 1963
 D.O. Wagner took charge of the HTA/5
 crew this date and following datum
 entries and remarks are his:

Note to all crew members-- I want
 any and all comments, suggestions,
 gripes, complaints and what have you

This must be partially attributable to
remote location of chiller that makes
it difficult to provide a return for used
water to the chiller. Hence water is used
once and dumped. (PP)

Entry #10: Thursday 10 October 1963 Cont'd
brought and entered in the book as they
occur.

There seems to be no SOP on the
service units. I asked Mr. Dege about
this and was informed that the factory
personnel were now writing one and
that it was scheduled for delivery
approximately two weeks after we
received the HTA/5. Even so I feel our
personnel will have to be trained
very thoroughly before being trusted to
use the stroke unit, and perhaps a
few more visual aids wouldn't be
amiss.

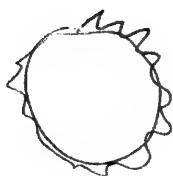
There are some leaks in the fix
system.

There are no water jackets around
the tanks in the processor and the
machine depends on circulating the
chemicals through a heat exchanger to
keep them at a pre-selected temper-
ature. To operate at 68°F, chilled water
at temperatures below 50°F are needed,
for even though the chemicals are stored
at 68°F they will heat up when put
through the pumps-- which operate at
110°F, and we don't have chilled water
in room 11. The closest is in chemical
mixing and we do not have the proper
hose to hook it up. [REDACTED] says STATOTHR
STATOTHR he will contact [REDACTED] tomorrow morning
and we will have the hose tomorrow
night. But 25 GPM and no scavenger
unit???

Hare ordered that pictures be spot
of all sections of the unit and all
possible shots made of operations so
that we will be able to pictorially
show the site test test.

Not a valid scratch test.
M.P.S.

Stapler will ultimately be replaced
by a tape splicer. Make best of
this one for now ispt



We read these press. switches. The problem was
that no of press switch had not been adjusted
correctly. After we adjusted it, it was o.k.
J.W.D.

Entry # 10: Thursday 10 October 1963 Cont'd
Removed one of the manifolds ~~of off~~
off of the wash tank because of leaks.
Seems that a special ~~thing~~ tool is
required (water pump pliers) and we did
not have any. [REDACTED] had to make
a trip to town to find a pair. After
reinstallation, it still leaked.

STATOTHR

Checked some of the film sent to
us by the 4000th to use as scratch. It
is short pieces they had left over and
thought we could use. However as it
has been handled several times it is
filled with hairline scratches (and some
larger than that) I feel that it is
only good for use during the 72 hour
test, as we could never trust a scratch
from it.

On a demonstration of the splicer,
I noticed that unless the film is
lined up perfectly that the outside
staples one end side or the other
have one end dangling free. Also
that the staples tend to tear thin
base film.

The leak in the fix service unit is
coming from pump PY-1, which is the
recirculation pump. The leak seems to
be at the plastic and stainless steel
joint in front of the pump. [REDACTED]
will put some gumk on it tonight when
we shut down.

When we are ready to start up, we
were unable to get the pumps in the
wash section to go. They would start
up, and after a few seconds would
stop. We lost almost an hour before
we found out that there is one extra
pressure switch that must be removed.

STATOTHR

8402 wrap around.

Capstan wrap around of 8402

Entry #10: Thursday 10 October 1963 Cont'd
 Record of nights runs:
 1st start up 23:25 hrs
 Shut down 23:46 hrs splice pulled out
 Total running : 21 minutes

Splice was frayed, thin base to leader.
 All staples pulled out. No sign of
 trouble prior to break. Machine
 speed at time of break 15 F.P.M.

2nd start up 23:50
 Shut down 23:52 Thin base film
 wrapped around roller going into dryer.
 Total running time : 02 minutes.

Reason for trouble: spring on dancing
 roller was loose. Total days running
 time 23 minutes

Maintenance notes for the evening.

Discrepancies noted:

a. Number 5 short stop filter cannot
 be changed until 2 hoses and six
 bolts are removed.

b. Filter drains hoses missing
 from above filter.

Transcribed by:
 S/M/Sgt Seals N. Fletcher

Entry #11: Friday 11 October 1963

STATOTHR

[REDACTED] was off sick.

Last night's shut down came after
 the second breakdown. This break-
 down was caused by the thin base
 film doubling and wrapping around
 the roller going into the dry box. A
 contributing factor undoubtedly was
 because the film was partially dry and
 when in this state the emulsion on
 the base side is very tacky. Shutdown
 for the evening was done by draining
 all of the wash tanks.

Entry #11: Friday 11 October 1963 Cont'd
 Bright, when we started preparing for start-up, all of the leader from yesterday had to be replaced and the machine rethreaded. This is the first time Air Force personnel had done the job and it was commenced without supervision. The attempt was made without turning the machine on, but as the tanks were full it was nearly impossible to pass the film around the chemical bearings. Then trouble was encountered when we tried to pass the wet film (leader) around the air bearing by having it stick to itself. [REDACTED] states that the bottom bearings should be covered with liquid and the pumps going, to aid in passing the film through. No tests on time will be done until the troops are better trained.

STATOTHR

According to [REDACTED] 15 minutes should be an average time for two men to do the job.

Notes on chiller. When the valve to the HJA 15 is wide open the pressure drops from 55 pounds plus to about 30 pounds. It is impossible to tell just what the temperature of the delivered water is, for the thermometer is offset from the water flow and does not give a true reading. But with the valve wide open and water going to one of our other machines, the temperature at the other processor rose to 76° F.

After running leader and getting the machine settled down, we loaded on our [REDACTED] It consisted of a short piece of dupe film and a short

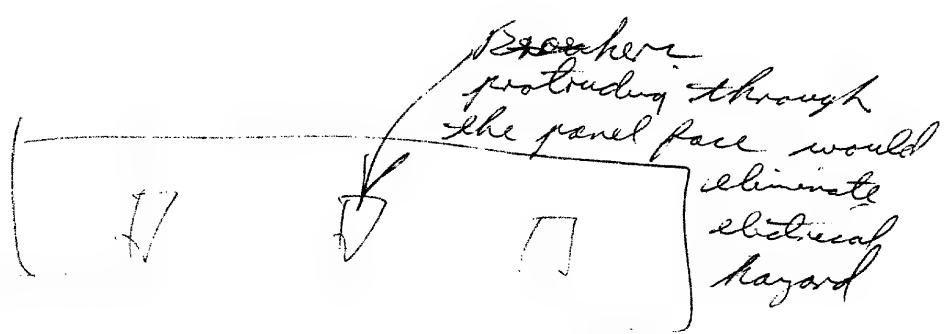
, bulky relay which has replaced a smaller one.

Must be corrected
Vacuum tanks
on film from
Capstan

Entry #11: Friday 11 October 1963 Cont'd
piece of thin base film. During the middle of the run, the short stop liquid bearing pump cut off, but the test was continued for it was felt it would be interesting to observe the results of this on the film. After the test the switch was re-thrown for the short stop pump and it restarted without any trouble. It is not certain just what caused the trouble and the console operator does not recall the period of elapsed time before he attempted a restart. The pumps are all connected through a time delay relay and it is possible that a restart was attempted too soon after the shutdown. Further investigation along this line will be made.

The chiller pump developed a leak during the test, this seems to be caused from the chilled water line being of greater pressure than the pump is designed to accomodate.

The spring on the bottom dance roller in the dryer cabinet was loose. This caused changes in tension on the film take up. When the thin base film hit the dryer it folded over once on each side and then broke. In addition, during the times we had the dryer door open there was a hang up in the dryer and extra tension on the film, the vacuum capstan, taking the film into the dry box, impressed the vacuum holes into the film. These marks are very plain and would show up on any prints or dupes made from the negative. See file on film inspection report. It is also noted in the film inspection report about



Entry #11: Friday 11 October 1963 Cont'd
 the new light that is mounted on the
 first air capstan out of the developer.
 This light fogs the film during
 processing if it is turned on for
 viewing.

Maintenance notes for evening:

Circuit breaker on service unit
 kick out, and had to be located in
 the dark since the machine was in
 operation. This is a definite safety
 hazard as the breakers and circuitry
 are open and can be touched by
 operating personnel. Recommended
 improvement: The service unit should
 be in a separate room in order that
 maintenance be performed in light. Covers
 to the circuit breakers should be such
 that they can be opened without tools.

Record of nights runs:

1st startup	19:18
Shut down	<u>19:34</u>
Total	:16

Ladder Broke

2 ^d startup	19:58
Shut down	<u>20:10</u>
Total	:12

Pumpout

3 rd startup	21:40
Shut Down	<u>22:43</u>
	1:03

Scratch Test completed

Total running time for evening 1:31

Transcribed by:
 S/M/Sgt Lewis N. Heaton

These unions are not necce. if she will function
as required. *edit.*

It was not caused by the tank filling, but by the
air in the lines of regulation

Entry #12 Monday 14 October 1963

An excessive amount of hypo was found on the floor under the machine. A leak was located in valve FV12 (See comments of 10 Oct) located immediately in front of the hypo recirculating pump. The installation is stiff, i.e., no unions were installed when the unit was made. This requires complete disassembly to make any repairs. The leak was repaired in 3.15 hrs. by [REDACTED] STATOTHR and one of our men, an additional 30 min. were required for the gasket compound to set.

In the meantime the venelators were cleaned and covered with cheese cloth.

STATOTHR

[REDACTED] made arrangements to have [REDACTED] prob STATOTHR to come out and run tests on the speed control.

[REDACTED] completed his draft of start-up instructions, they will be used in all future start-ups.

Test results: A test was run to determine the length of time it takes to fill the fix tank from the storage tank.

It required 3 mins. and 45 sec. One observation made was that at the tremendous rate at which the chemicals are pumped, it may cause excessive chemical attrition. Many tiny air bubbles formed and clung to the leader and the sides of the tank.

When for removing quiet disconnect. Service units
are not in their correct location since there is a post in
the middle of the room which shelves the units about
a foot and a place. LL

Battery went out, because of high battery usage which
is caused by low line voltage
LL

Entry #12 Monday 14 Oct 63 Cont'd

Maintenance notes for evening:

The 2 1/2" quick disconnect was removed and a 2 3/8" x 13" pipe was installed in its place. A stainless steel pipe was unavailable so a galvanized one was used, this type of pipe will not hold up for very long because of hypo effects.

Record of night run:

1st START UP 10:00
 SHUT DOWN 00:15,
 TOTAL 2.15 hrs.

Ran scratch (flashed 8402) and first test of H+Ds. The H+Ds were run at (4) four speeds; 5 feet per min., 10 feet per min., 15 feet per min., and 20 feet per min. During the final test the top bearing in the wash tank went out and no trouble light came on at the control panel so the test was completed & before shutting down. A total of 633 ft. of film and leader was run during the evening.

Entry #13 Tuesday 15 Oct 63

Because the air conditioning system was inoperative no attempt was made to operate the machine.

STATOTHR

[REDACTED] presented an orientation on the machine. [REDACTED] and two other men worked on the service unit, they repaired several leaks:

1. Leaks fixed on Fix valves

the thermal overload MCs defective because of low voltage
on the machine

Entry #13 Tuesday 15 Oct 63 Cont'd

- a. Leak below valve #FV10 was stopped by stripping adjacent lines and refitting with Pro-seal.
- b. Leak fixed on Recirculating lines by disassembling and putting Pro-seal on threads.

2. Leak in developer valve #DV10 was caused by a broken nipple.

3. Leak on wash tank #2 manifold could not be repaired until an 8" long 1 $\frac{1}{8}$ " diam. hose is obtained

Explanation of last night's breakdown of the water bearing pump seems to be that the control switch on the service unit has a thermal overload switch that was defective. A replacement has been ordered from [REDACTED] In STATOTHR addition, the sensor units in the Station #3 probe on the thermometer had shorted out and is now being replaced.

Some changes were made in the wiring so that the trouble lights are hooked up to the thermal overload switch instead of being hooked up to the pressure system as are the other pump trouble lights.

Entry #14 Wednesday 16 Oct 63

[REDACTED] spent the entire day at H.F. making the parts needed to repair the service units and the probes for the thermometer.

Entry #14 Wednesday 16 Oct 63 Cont'd

We were unable to operate until [redacted] returned and made all the repairs. Fresh chemicals were mixed and pumped into the service unit storage tanks for future use.

STATOTHR

Because of excessive pressure on the chilled water line, the pump supplying the chiller unit will be bypassed and the water will be taken directly from our source to the unit. Resistance probes on the thermometer were installed. A plastic nipple in the developer system at the service unit cracked and had to be replaced.

Entry # 15 Thursday 17 Oct 63

The failure of the 3rd bottom bearing in the wash tank seems to have been caused by a loss of pressure that was traced to a crack in the face of the bearing. This might be an isolated case, but for the time being a check will be made of all plastic surfaces prior to starting up.

While the bearing was being repaired, the developer tank was filled with water to check for leaks.

All repairs made the previous day were good. During this period, the supply spool was loaded with 500 ft of leader. [redacted]

STATOTHR

wish to test the drying cabinet at high speeds with leader.

a plumbing schematic and check list.
(LL)

On 50% of the pumps only WD

Entry #15 Thursday 17 Oct 63 Cont'd

A check of machine speed was made against the indicated speed. Because of the impending endurance test and the splitting of the crew into two crews, several simulated start ups were made with the relatively inexperienced personnel performing the tasks that will be assigned to them during the long test. When the first start up was made in the light running leader, the new crew was able to accomplish all the tasks, including the bleeding of the entire pump systems in a satisfactory manner. We don't have a firm SOP or even a good understanding of the plumbing service units. A lot of time is lost each time a tank is drained because it is always necessary to bleed the system before starting again. It is understood that at a future date bleed valves will be installed in each pump. At the present time a bolt must be loosened to permit the air to escape, this is rather complicated because the pumps are somewhat difficult to get at. Due to the room arrangement it is nearly impossible to load the film cart anywhere but in the machine room, we must stop machine operation, go "Dark" and practically load the film by hand.

Entry #15 Thursday 17 Oct 63 Cont'd
Record of night run:

1st Start up	20:45
Shut Down	<u>21:30</u>
Total	45 min.

Leader was run at 60 feet per min. Good tracking and drying. The film cart was loaded with scratch film, HX Ds, and resolution targets in preparation for the endurance test.

Entry #16 Friday 18 Oct 63

This was to have been the start of the 72 hour endurance test, but because a failure in one of the silicon rectifiers in the control panel that supplies DC current to the drive capstan, (capstan entering the dry box) we were unable to continue the test. The rectifier heated up and the fan supplying cool air to the unit was unable to keep it cool. Several small fans were used in an attempt to cool it off, but we were unable to do so. Prior to starting the test the developer temperature was 71°F. A start up was made with leader while the temperature was being lowered. In 25 minutes the temperature came down only one degree and the chilled water source was depleted. The remainder of the time leader was run until a ~~break~~ break occurred.

Entry #16 Friday 18 Oct 63 Cont'd.
Record of running times:

1st start up 1330
Shut Down 1525 *
Total time 1:55

* Splice (staples) broke in second wash tank. This was a leader to leader splice.

2nd Start up 16:05
Shut Down 16:45 *
Total time .40

* Silicon rectifier on second Captain drive control out of order. Unit was removed from processor and is going to [redacted] over the week end for replacement. Total running time for 72 hr test was 2.35 hrs. Total footage, all leader was 885 ft.

STATOTHR

Entries #12 thru #16 were transcribed by:

T/Sgt Gilbert M Herrera

Entry #17 Monday 21 Oct 63

The machine was started up, all systems were checked out. Leader was run while chemical temperatures were reduced. During this running we again had trouble with the speed controls (silicon rectifiers) in that they were burning out fuses. The rectifiers themselves are new types that

This is correct
W.D.

low voltage 60

No, this is not correct. Not when flow drops
but when one pump fails must be flow switch
will cut out all three pumps as it was intended to do
ADD

low voltage high Amperage because ~~for off if~~
~~wrong to~~ 60

Entry #17 Monday 21 Oct 63 Cont'd.

by the sub-contractor over the weekend. It is understood that tests are to be run tomorrow to make sure they are the right ones for the job. It is believed that the fuses burn out due to an overload on the drive capstan. The overload on the drive capstan occurs when the pressure falls on the water bearings in the wash tank due to a pump failure. It is also believed that the pumps fail when the pressure in one of the pumps drops and the master pressure switch cuts out all three pumps.

After an hour of trouble free running it was decided to run film. Trouble again, the master relay box controlling the water pressure pumps burned out a fuse. The film wrapped around the vacuum drive capstan. At this time something new was discovered. The run was started at about 15 feet per min and the speed was reduced to 3 ft. per min when the H & D's started in to the developer. All the military personnel assumed that the supply spool drive was in sync with the machine drive, but this is not so. The supply spool drive continued driving at a faster speed and caused the film to unwind and wind backwards until it jammed the machine.

yes, this is possible to do
and it acts like flywheel.

Entry #17 Monday. 21 Oct 63 Cont'd.

The proper way to adjust the supply spool speed is to keep a certain tension on the film by adjusting the control knob ~~too~~ until they are in sync. A second method is to release the drive to the supply spool and let the drive captain pull the film off of the supply spool. This may not be possible when the spool is fully loaded because of the weight.

Record of nights run:

1st start up	16:05	
Shut Down	<u>19:05</u>	Shut down to load
TOTAL	3:00	film

2nd start up	19:05	
Shut Down	<u>19:30</u>	Thin base film
TOTAL	:25	wrapped around vacuum captain drive.

3rd Start up	19:40	
Shut down	<u>21:00</u>	Film jammed
TOTAL	1:20	in supply cart.

4th Start up	21:10	
Shut Down	<u>21:35</u>	Ran machine to
TOTAL	:25	get film out.

TOTAL RUNNING TIME FOR DAY 5:10
 TOTAL THIN BASE FILM 350' TOTAL LEADER
 2260'. CHEMICALS Sp.G. = 1.087 pH=10.53.

Transcribed By

T/Sgt *Silvertown* Geneva

Entry #18 Tuesday 22 Oct 63

The function of the vacuum in the capstan is to hold tension on the material being processed. While this is the only way that leader and regular films can be handled, thin base film has one basic difference from other films. It has an emulsion (non-light sensitive) on the base side, and when wet it is very sticky. In nearly all the tests run our troubles have occurred when the film reaches the vacuum drive capstan. Today a test was run with the vacuum disconnected on this drive roller.

Results:

1. Drive roller functioned as a drive roller, i.e., it pulled the film through.
2. Heretofore the vacuum sucked the film so hard that the roller made indentations from each of the vacuum holes. When the vacuum was shut off the holes no longer showed up.
3. When the vacuum was cut off there was no tension on the film going into the dry box. With the buffeting the film received in the air knife, the film "wandered" on the drive roller and required constant attention. Even with constant attention in the light some

Entry #18 22 Oct 63 Cont'd.

In the past all splices (staples) made on this base film have given trouble. A sandwich type splice was made and worked perfectly with no sign of tears. A test was run on our safe lights, film cart, and the panel lights. The safe lights were found to be too strong. These were turned towards the ceiling and a smaller bulb was installed. We fastened film in various parts of the film cart, closed it and exposed the cart with flash bulbs. This may have been an unfair test. Tonight film will be placed in the cart and left overnight under normal room light. The film will be processed tomorrow and give more conclusive results.

Record of nights run:

1st start up	17:15
Shut Down	<u>17:50</u>
TOTAL	.35

Total feet run 311, 20' leader 290 ft film.

Transcribed by

T/Sgt Gilbert M. Herrera

Entry #19 Wednesday 23 Oct 63

The following named officials visited and observed the operation of the HTA-5 processor. D

Col Austin, 15th AF DI
 Col Binks, 15th AF Asst DI
 Lt Col Kane, 15th AF DIT
 Lt Col Richards, 15th RTS, Commander

STATOTHR



May Schmidt, 6594th Test Sq, Westover AFB.

Exhausted chemical were drained, the machine was cleaned and refilled with fresh chemicals.

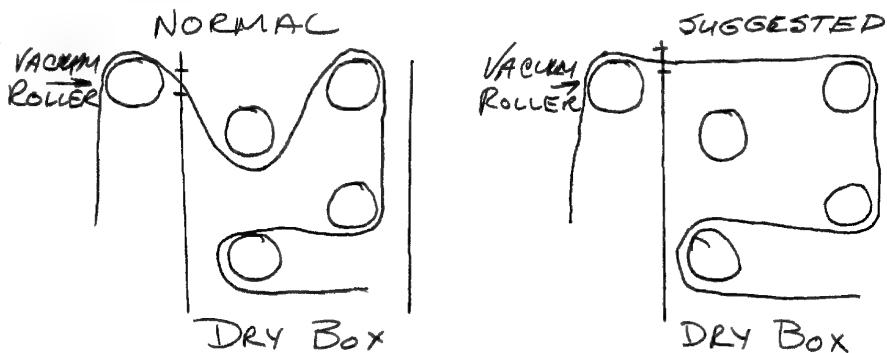
Chem. Cert. pH 10.53, sp. gravity 1.099, and total alkalinity 9.65. All were within standard. The film cart was loaded with 200 ft of scratch, 5 strips of H + D's separated by 50 ft of leader, and 1000 feet of exposed thin base film. Trouble was again encountered when the film persisted on wrapping itself around the vacuum drive capstan.

By keeping a man stationed at the roller we managed to get the H + D's through the machine. Because the H + D strips were short no trouble was encountered; however when the 1000 ft of exposed film came on the vacuum roller it again wrapped around the it.

[REDACTED] then suggested that we bypass the first air bearing in the dry box.

Entry # 19 Wednesday 23 Oct 63 Cont'd.

This permits the film to leave the vacuum roller at about 45° or approx. 3" sooner. As follows:



Several hundred feet of film was processed in this method without any trouble. This also eliminated the indentation marks made by the vacuum holes in the roller. Several screws came loose in the torque take up and had to be operated by hand until the lights were turned on and the unit could be fixed.
Record of nights run:

1st start up 18:45
Shut Down 21:30
TOTAL 2:45

2nd start up 22:10
Shut Down 22:30
TOTAL :20

TOTAL MACHINE RUNNING TIME: 3:05
FILM FOOTAGE 817 LEADER 481 ft. TOTAL FOOTAGE
1298'

Transcribed By

Entry #20 Thursday 24 Oct 63

The following readings are the results of the final H & D's run on 8402, thin base film:

Film Speed ft/min	Dev Time	Aver. Gamma
15 FPM	2.6 MIN	2.10
12 "	3.3 "	2.12
9 "	4.4 "	2.20
6 "	6.7 "	2.16
3 "	13.3 "	2.05

This seems to be the optimum gamma that we can obtain from this combination of processor, film, developer, and temperature. In a telephone call to SAC, Lt Col George was told of the difficulties we were having trying to obtain a 2.50 Gamma, permission was obtained to go on to the other phase of testing. The decision was made to test 5421 (G-2 film) and 8430 (278 film) with DK-50 developer. Times were kept on each section of the machine as it was drained. Each tank, the developer, fix and wash tanks all drain in approximately 5 min.

~~tank tank~~. It was not necessary to use tray cleaner to clean the machine, 120°F water was sufficient to do the job. Many pieces of film and lead had to be removed from the tanks, some staples were also found in the tanks but these were easily removed with a ~~sug~~ magnet.

When developer and fix were put into the machine, the bottom bearings were covered and with the pump on, a ~~timed~~ took about 20 seconds made

One major cause for this length of time was that the leader
got wrapped around the last bottom bearing of the developer
tank and they could not get it loose. It took them about
20 min. to do this.

W.D.

This WCS caused by the fittings in the funnel on
which the filter had been exposed.

W.D.

Entry #20 Thursday 24 Oct 63 Cont'd.

to see how long it would take two experienced technicians to thread the machine. It took 1 hour and 16 minutes. With more practice this time can be reduced, but it is not a simple machine to thread. A second test was run to check the light tightness of the film supply cart, and it seems to indicate that if we leave film in the cart we must have several wraps of leader around it or the normal room lights will fog it.

Record of machine time:

Start Up 16:30

Shut Down 17:45

TOTAL 1:15

TOTAL Film Run: 318 ft (8402 thin base)

After examining the scratch material run the previous night, it was noticed that the density of the film on the edges was greater than in the center. The reason is not known, but one factor could be the increased agitation received by the film from the developed pumped through the chemical bearings. Special attention will be paid to this problem in the future.

Transcribe by

T/Sgt Gilberton Herrera

Entry #21 Friday 25 Oct 63

Prior to filling the machine with chemicals, a hose was replaced on ~~the hypo manifold~~ the hypo manifold. While the tanks have been emptied and refilled before, this was the first time that they have been drained and completely cleaned. The storage tanks and the service units were also drained and cleaned. When the machine tanks were filled from the organization's chemical mixing unit, it was noted that the tanks had to be topped off twice as the chemicals filled the hoses, filters and pumps to the service units. It was estimated that this took about 3 gals.

DK-50 developer is now being used on 5427 film. Chemical anal Cert: 1.034 sp. gravity, 9.60 pH, + 3.3 T.A.

Once again, bleeding of the pumps caused a great deal of time. It is understood that the service unit is a prototype and that it was built as a breadboard design, however it takes from 1 to 2 hrs. to loosen the faces of the pumps to bleed them. Yesterday was the last day that [REDACTED] STATOTHR worked on the machine, he will [REDACTED] STATOTHR not return to this project. [REDACTED] took his tools with him, leaving nothing with which to do any servicing. We are now trying to get more tools.

Worshiped
Caused by jester. WD

Entry #21 Friday 25 Oct 63 Cont'd.

It is recommended that all of the filters and pumps be stopped and that finger operated valves be installed as soon as possible. The machine was loaded with 5427 film, this film was flashed on the EN6A printer with ~~to~~ 2.00 ND filter at 60 ft per min. The scratch was run at 10 feet per min at 75° F. The last 10 feet of the scratch film was processed with room lights on to get a greater density. Absolutely no trouble was encountered with the machine in tracking and drying. The last hundred feet of film was run at 15 ft per min. and from a visual inspection of the curl of the film in the dry box we could have dried the film at a much faster speed. Samples were taken from the scratch film and read on the densitometer. The density varied quite a bit across the width of the film. Sample readings as follows:

Left side	Center	Right side
1st .70	.66	.96
2nd 1.00	.88	1.21

Record of nights run:

1st Start Up 21.05	2nd Start Up 22.45
Shut Down 21.50	Shut Down 23.20
TOTAL .45	TOTAL .35

TOTAL RUN TIME 1:20, 150 ft 5427 film, + 450 ft leader.

Transcribed By

Sgt Albert M. Stevens

Chased by friend not machine
1000

Yours have proven that it develops easily at all
speeds 1000

Entry #22 Monday 28 Oct 63

Two replacements were made on
the testing crew:

A/C Carlson replaced [redacted] STATOTHR

A/C Statzer replaced S/Sgt Hornhouse

Evaluation of the first scratch
film (5427) which was run on
25 Oct 63 is as follows: The film
revealed no visible scratches or
defects with the exception of
the uneven development
mentioned before. Also a narrow
streak down the center of the
film.

[redacted] believes that STATOTHR
the reason for this is that
the machine was designed
to operate at an optimum
speed of 20 ft per min, and does
not operate (agitate) properly
in the lower speed range.

There is also a possibility that
a piece of film or leader is
caught in the developing knife
causing this occurrence, this
will be checked out.

1600 hrs: Machine was checked, every-
thing was in order. 5427 film is
loaded, chemicals are certified and
ready to run.

1630: Start up. Developer temper-
ature $67\frac{1}{2}$ F. Running temperature
will be 75° F for test.

1655: Developer temperature has
reached 75° F and stabilized.

2035: Machine has been tracking very
smoothly, no pb problems. We had
only three runs of H and D's on the
film cart,

Entry #22 Monday 28 Oct 63 Cont'd.

Completed H+D's runs at 3, 6, + 9 ft per min.
2045 hrs. Shut down - Additional H+D's were spliced to the film cart along with 500 ft of exposed film. This set of H+D's will be processed at 12 + 15 ft per min.

2100: Start up - no problems

2203: Shut Down - clean up.

Record of nights run:

TOTAL RUNS AT TIME - 5 hrs 18 min.

2196 ft of scratch and H+D's

500 ft of exposed film

TOTAL FOOTAGE: 2696

Transcribed By
T/Sgt Gilbert M. Henne

Entry #23 Tuesday 29 Oct 63

Due to the poor quality of the master positive roll, it was discarded and a new one was obtained.

Last night's run of H+D's which were to be used to make a speed gamma chart was run at too slow a speed. Tonight we will run more H+D's, at speeds of 15, 17, 19, 21, + 23 feet per min. in order to construct a speed gamma chart for film 5427. H+D's were printed at .85A with .40 ND filter.

1600: Reported for duty. Chemicals were checked and the fix, developer, and wash recirculation unit filters were changed.

[REDACTED] felt that a change of filters would give increased pressure in the recirculation lines and correspondingly, [REDACTED] the liquid bearings.

Entry #23 Tuesday 29 Oct 63 Cont'd.

Film processed ^{tonight} will be inspected closely to ascertain the effectiveness of this filter change. This is in reference to the uneven development caused by the liquid bearings.

2010: Start up. Machine is running smoothly. Pressure gauges on the recirculation lines are reading 2 + 3 PSI higher than previously. Probably because of the filters being changed.

2145: Shut Down. The quality control man is reading the HTD's, we are now waiting for the results.

2150: HTD's were read and plotted. It is determined that 19 feet per min will process the film to the 1.95 gamma desired for this film (5427). 500 ft of positive 5427 film will be processed to a 1.95 gamma.

2155: Start up.

2223: Shut Down: No problems, cleaning up for evening.

Totals: machine running time 2:03
 Leader 978 ft
 Film 650 ft (5427)

Comments:

Mechanically the HTA-5 has settled down to a reliable processor. Only time will tell, if this situation will last over an extended time period.

Transcribed By
 T/Sgt Gilbert M Lerner

Entry #24 ~~Wednesday~~ 30 Oct 63

Tonight will be the last night running in DK-50 Developer since our supply is exhausted. The rest of the test which require DK-50 will be postponed until we receive a shipment.

This evenings run will be made with 8430 (S0 278) film processed to a gamma of 1.65 with DK 50 at 75°.

The evaluation on the film run yesterday, S427 positive is as follows: Slightly uneven density varying between the outer edge and the center of the film. This effect is less serious than previous runs. 1600: Reported for Duty. HHD's, 2 rolls of 500 feet each (8430), and leader were spliced and loaded in the supply cart.

1810: Start up.

1915: Shut Down. HHD's are being read.

Speed gamma chart indicates that 11 ft per min will obtain the desired gamma of 1.65. We are having temperature problems, so speed will be varied accordingly.

1920: Start up. First 500 feet will be run at 9 ft per min.

2125: Shut down. Developer temp. is stabilized at 75°, next roll will be run at 11 ft per min.

2150: Start up.

2220: Head HHD's reads 1.66 gamma. All ok.

2310: Shut down. Clean up, tanks will be drained. Total run time: 3:30. Total ft run 1000 ft 8430, and 600 ft of leader.

Transcribed By:

Entry #25 Thursday 31 Oct 1963

Today's operation was limited to the preparation for the 72 hour endurance test. Chemicals were mixed, films & HTD's were printed. F
D-19 chemical analysis:

Machine tank : Spec G = 1.127 pH 10.61 TA 15.7

Storage & Rept tanks : Spec G = 1.126 pH 10.66 TA 15.8

Evaluation of film processed yesterday:
1000 ft of 8430 (50278) in DK-50-75°F.
11 feet per min. Gamma 1.66 Hd HTD
This film was free of faults listed in the test service procedure manual, 3.7.2 para., with the exception of uneven development, this is a reoccurrence and an effort will be made during the 72 hour test to find the cause and rectify it if possible.

The schedule for the 72 hr test is as follows:

1200 hrs 1 Nov 63 to 1200 hrs 4 Nov 63

Shift "A" 1200 To 2400 Shift "B" 2400 To 1200

M/Sgt Owings NCOIC T/Sgt Herrera

A/C Statzer CHEM MIX + QC S/Sgt Simpson

S/Sgt Haynes Machine A/C Martin

A/C Holden Operators A/C Murray

Mr Dege Maintenance T/Sgt Sprinkle

Friday 1800 - 0200 Capt Doucette

Saturday 0200 - 1000 Lt Carlson

Saturday 1000 - 1800 Capt Mc Common

Saturday 1800 - 0200 Capt Doucette

Sunday 0200 - 1000 Lt Carlson

Sunday 1000 - 1800 Capt Mc Common

Sunday 1800 - 0200 Capt Doucette

Monday 0200 - 1000 Lt Carlson

Transcribed by:

T/Sgt Gilbert M Herrera

Shutdown (flare)
^{Master}
^{by}

Shutdown (Plenum knife)
^{dogged}

Shutdown (flare)
^{Dine}

Entry #26 Friday 1 Nov 1963

1200 hrs: Start up: for 72 hour test.

✓ 1245 hrs: Shut down: The fix master switch fuse burned out. Fuse replaced.

1300 hrs: Start up:

✓ 1310 hrs: Shut down: The developer plenum knife did not work, the pump was operating but no fluid came out of the knife. A piece of leader was found in the line. This was removed and the plumbing was reconnected.

1400 hrs: Start up: all gauges were read and recorded.

1500 hrs: Machine running good.

Temperature is up to 85°F.
smoothing is running at 20 ft per min.
with D-19 Developer. H+D's 8402
and H+D's 8430 (so 278).

1600 hrs: Just H+D's off of take up.
Airmen Statzer will read and record them.

1630 hrs: Machine running good,
at 1600 hrs the temperature set point was changed to 68°F and
it is now 79°F, a drop of 11°F
in 30 min. Machine running at 5 FPM.

1700 hrs: #2 drive fuse burned out
and was immediately replaced.

1800 hrs: Machine running good, have
had no further trouble. Temperature
68°F, at 5 ft per min.

1830 hrs: Machine running good.

1930 hrs: Machine running good.

2030 hrs: Machine running good.

2130 hrs to 2400 hrs: Machine running
good. Footage for last 12 hour period
is 3450 ft.

Transcribed By

T/Sgt Albert J. DeRosa

Vacuum Marks

8402 States
High Fog Level

8402,
States

Speed Indicator
wrong
on 4 was on 5
reason unknown

Dine Stopped
Shutdown
because Wash bearing
2 was out
By passed 2nd wash.

Entry #27 Saturday 2 Nov 1962

2400 hrs: Second shift reported for duty. Machine running good, now processing H + D's masking machine speed 5 FPM at 68°F.

STATOTHR

0130 hrs: H + D's on take up. Read by [REDACTED]. Readings as follows:
 $50278 - 8402 = 1.96 \text{ gamma}$
 $8402 \text{ H + D film was covered with static marks. This film also had indentation marks from the vacuum roller.}$

0200 hrs: H + D's on take up.

Read by [REDACTED] as follows: STATOTHR

$50278 - 8402 = 1.80 \text{ gamma}$

8402 film again was covered with static marks, and high fog level. An H + D from the same stock was hand processed and showed neither fog nor static marks.

0230 hrs: H + D's on take up. This H + D was too dense (fog) and had too many static marks to be correctly read.

0258 hrs: Arman Martin reported that at 0145 he noticed that speed indicator was set on ~~4~~ 4 FPM instead of 5 FPM, he made the correction. He did not know how or when it occurred.

0355 hrs: Drive rollers stopped running, reset would not correct this, fuse was okay. Cause: Wash bearing number 2 was not operating. We can not find out what is wrong, we have bypassed the second wash and are continuing to run leader as is.

contaminated to
over leader w/wash
bearing out

Shutdown
Wash bearing
can't be fixed

Entry #27 Saturday 2 Nov 1963 Cont'd.

0414 hrs: Situation the same. Sgt Sprinkle is trying to find out what is wrong with the second wash bearings.

0440 hrs: Situation the same. FT 5390

0530 hrs: No change

0630 hrs: No change

0726 hrs: Shut down. Wash bearings can't be fixed.

Capt On a Common has ordered
Shut down of 72 hr test
Final footage 05134

Transcribed By
Sgt Gilbert D. Herrera

Entry #28 Monday 4 Nov 63

1600 hrs: Reported for duty. Machine was checked, everything appeared to be in order. The necessary repairs were all made yesterday. Aluminum strip were attached to the inside of the supply cart spool in an attempt to eliminate static which has been a problem of late, this has occurred only on thin base film.

The following officials observed the operation tonight:



STATOTHR

Autometrics Control

Wansco controller
in dry box malfunctioning

Known densities

Several Breaks in leader

Entry #28 Monday 4 Nov 1963 Cont'd.

1st Col Richards, 15th RTS
Capt McCommon, 15th RTS
Majgt Price, 15th RTS

1745 hr: Start up: Leader was run for the purpose of display.

1825 hr: Shut down: Guests departed.

Total of 528 feet of leader was run.

1830 hr: It was discovered that the disco controller for the fourth station in the dry box was malfunctioning. The unit was removed and will be repaired by the manufacturer. This unit controls only one part in the dry box, therefore, film can still be dried at speeds under 10 FPM.

2030 hrs: Start up: Flashed 50 278 film will be run to determine what is causing the uneven densities across the film.

2130 hrs: Shut down: Total footage 718

Total footage: 500 ft film - 746 leader.

Total running time: 1:40 hrs.

Maintenance notes: #4 station in dry box out, will be replaced by 1ander. Several stops during first run due to breaks in leader.

Evaluation of yesterday film: Film was good, and free of defects as outlined in service test procedures, 3.7.2 par a. The uneven density in the flashed materials has been persistent and tests will be run tomorrow to find the cause.

Transcribed By

Entry #29 Tuesday 5 Nov 1963

Officials observing tonight:



STATOTHR

G

This evening we are running only flashed material for the purpose of determining the cause of the uneven densities found in all previously run films.

The dryer unit which was was removed yesterday has not returned as yet, so everything processed today will be a 10 FOM.
 1600: Reported for duty: Machine being prepared for running.

1810 hrs: Start up.

1910 hrs: Shut down: First test complete

1958 hrs: Start up:

2020 hrs: Shut down: Second test complete
 Total film 200^{ft} Total Leader 8.81^{ft} Total R. 1:27
 Film Evaluation and test conclusion:

The film flashed with the EN-6A Printer had the uneven densities, several frames were turned 90° and spliced in, the streaks horizontal proving the printer at fault, this was attributed to wrinkles in the ND filters. Film exposed with a point light source was evenly exposed and developed. In the future flashed material will be exposed with a point light source.

Transcribed By
 T/Sgt Gilbert M. Hensel

Entry #30 Wednesday 6 Nov 1963

1600 hrs: Reported for duty.

Repairs on the station #4 dry box unit have not been completed.

Tonights running will be on printed SD 278, 8401, and 5425 with H+D's at 68°F at 10 FPM. We are also running scratch film exposed 1 sec. and $\frac{1}{2}$ second with a point light source. Alternate frames will be turned 90° and 180°.

1730 hrs: Start up.

2015 hrs: Every thing running smooth, we are going to speed up to 20 FPM to determine if the dry box will dry at higher speeds with #4 station malfunctioning.

2030 hrs: Speed reduced to 10 FPM, film not properly dried.

2220 hrs: Shut down.

Total run time = 4:50

Total footage = 350 ft leader - Film 2181 ft.

Film evaluation:

The scratch film was good, there were no defects, with the exception of fog in the beginning of the run. H+D's on the SD 278 were fogged and unreadable.

SD 8401 = Gamma 1.75 at 10 FPM

SD 5425 = Gamma 1.32 at 10 FPM

Transcribed By

-17 by Lt. Gilbert M. Herrera

Entry #31 Thursday 7 Nov 1963

STATOTHR

There was no machine operation today. [redacted] went to Houston fearless at Santa Monica and will not return until tomorrow, he had to get some electrical parts and have some shields made for the dry box. Lt Carlson was away on TDY for the day. The remainder of the crew was given off.

Reported By
T/Sgt Gilbert D. Herrera

Entry #32 Friday 8 Nov 1963

1600 hrs: Reported for duty. Dry box unit is being replaced.

1630 hrs: Dry box #4 unit still not functioning properly. The temperature probe in the dry box is being replaced.

1645 hrs: Everything is now functioning okay.

1700 hrs: Rubber molding was installed around the joints of the film cart light box.

1800 hrs: Tonight run will be on Versepan H+Ds and printed film in D-19 at 68°F.

1805 hrs: Start up: H+Ds are being run at 5, 10, + 15 FPM.

1930 hrs: Speed gamma chart was constructed and it was determined that 7 FPM would obtain the desired 2.00 gamma.

Shutdown
Fuse in #2 line
out 3 times

Entry #32 Friday 8 Nov 1963 Cont'd.

2100 hrs: Everything running smoothly

2200 hrs: Everything running smooth.

2300 hrs: Shut down. Clean up.

Total Running time: 4.45

Total film 1,399 ft - Total leader 400 ft.

Film evaluation:

The film was free of defects with the exception of fog at the tail end, the H+D's were too fogged to be evaluated. The Head H+D was apparently run with lights on as it was completely fogged and useless.

Transcribed by
T/Sgt Gilberton Henner

Entry #33 Tuesday 12 Nov 1963

1600 hrs: Reported for duty. Checked out machine. Now loading the film cart with 500 ft of 50 D78 film and H+D's, and 740 ft of 50 153 and H+D's.

1700 hrs: Finished loading film cart.

1730 hrs: Start up: Will operate at 10 ft per min at 85°F with D-19.

1830 hrs: Machine running good.

1950 hrs: Temperature now 85°F, it took 1 hr and 20 mins. to raise the temperature from 62°F to 85°F.

1911 hrs: The fuse in the #2 drive has burned out 3 times. Ran out of fuses so a different one was used. Shut Down.

Shutdown

Take-ups problem

Trouble w/ drives
in film cart

air knife fell
against

Entry #33 Tuesday 12 Nov 1963 Cont'd.

1930 hrs: Start up.

2130 hrs: Shut Down: Short stop pump went out twice. Had trouble with the take up starting and stopping which caused the film to pile up in the dry box

~~2220~~. 2145 hrs: Start up

2220 hrs: Shut down. Clean up.

Total Film: 1831 ft Total leader 475 ft

Total run time: 4.01

Transcribed by
T/Sgt Gilbert Jr Keneca

Entry #34 Wednesday ^{13 Nov} 1963

1600 hrs: Reported for duty.
Machine is being prepared for running. Tonight run will be on 8402 Thin ~~base~~ base film at 85°F in D-19 processed to a gamma of 2.50.

1800 hrs: Trouble is being encountered with the drive in the film cart. ^{STATOTHR}

1830 hrs: [REDACTED] has fixed the drive in the film cart. A faulty switch caused the trouble.

1915 hrs: Start up. Leader is in the machine at present, the temperature is still at 75°F.

1940 hrs: Shut down: The bottom guard on the air knife fell into the photo ~~of~~ flo tank.

1945 hrs: The guard was retrieved and it was found to have been only ~~part~~ ~~broken~~

Entry #34 Wednesday 13 Nov 63 Contd.

2010 hrs: Start up: Developer at 85°F.
 2020 hrs: Shut down: The head of the film wrapped around the vacuum drive roller. Previously a guard was installed in the dry box to deflect the air blow back, which was believed to be the cause. The guard was removed and the first air bearing was bypassed, this has helped in the past. H

2100 hrs: The bypass did not help, the film is still wrapping around the drive roller. Sgt Haynes believes that the air knife is drying the film too much, causing the film to adhere to the roller.

2130 hrs: Sgt Haynes decreased the air going through the air knife by stopping up the two bottom holes.

2200 hrs: Start up: Running smoothly, the wrapping seem to have stopped.

2240 hrs: Shut down: Station #4 in the dry box is not at peak temperature, the film is not drying properly. Station #3 was stepped up to 150°F to try to compensate for this.

2250 hrs: Start up: Everything is operating properly at present.

2306 hrs: Shut Down: Cleaning up. At the beginning of today's run we encountered fuse, mostly motor overload. Total film: 1317 Total leader 387 Total run time: 1:40 Transcribed by *[Signature]*

Entry #35 Thursday 14 Nov 1963

1600 hrs: Reported for duty: Today's run will be 8402 exposed film, scratch and H+Ds. [REDACTED] STATOTHR

directed the removal of the vacuum drive roller, it was cleaned and replaced.

1940 hrs: Start up: Developer temp. 85°F., fix temperature 85°F.

2000 hrs: Film is not drying properly. Dry box temperature 118°F. The film has wrapped around the vacuum drive roller again.

2005 hrs: Shut Down.

2155 hrs: Start up.

2225 hrs: Shut down: made a change in drive roller piston.

2300 hrs: Start up. The film is not tracking or drying properly in the drive dry box.

2325 hrs: Shut down: clean up.

Total films: 414 - Total leader 428

Total run time: .55

Transcribed by
T/Sgt Gilberton Henre